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ABSTRACT

This paper uses new survey data on employers in four large metropolitan areas to examine the determinants of employer demand for welfare recipients. Data come from a telephone survey of approximately 750 establishments. Results suggest a high level of demand for welfare recipients, although such demand appears fairly sensitive to business cycle conditions. A broad range of factors, including skill needs and industry, affect the prospective demand for welfare recipients among employers, while other characteristics that affect the relative supply of welfare recipients to these employers (such as location and employer use of local agencies or welfare-to-work programs) influence the extent to which such demand is realized in actual hiring. Moreover, the conditional demand for Black, and to a lesser extent Hispanic, welfare recipients lags behind their representation in the welfare population and seems to be more heavily affected by employers' location and indicators of preferences than by their skill needs or overall hiring activity. Thus various factors on the demand side of the labor market continue to limit the employment options of welfare recipients, especially those who are minorities. (Contains 7 tables and 34 references.) (Author/SLD)

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Employer Demand for Welfare Recipients by Race

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Abstract

This paper uses new survey data on employers in four large metropolitan areas to examine the determinants of employer demand for welfare recipients. The results suggest a high level of demand for welfare recipients, though such demand appears fairly sensitive to business cycle conditions. A broad range of factors, including skill needs and industry, affect the prospective demand for welfare recipients among employers, while other characteristics that affect the relative supply of welfare recipients to these employers (such as location and employer use of local agencies or welfare-to-work programs) influence the extent to which such demand is realized in actual hiring. Moreover, the conditional demand for black (and to a lesser extent Hispanic) welfare recipients lags behind their representation in the welfare population and seems to be more heavily affected by employers' location and indicators of preferences than by their skill needs or overall hiring activity. Thus various factors on the demand side of the labor market continue to limit the employment options of welfare recipients, especially those who are minorities.

Employer Demand for Welfare Recipients by Race

I. INTRODUCTION

Federal welfare reform legislation passed and implemented in the 1990s imposes stringent work requirements and time limits on welfare recipients, both of which generate pressure on them to gain employment as rapidly as possible. Indeed, since the mid-1990s, welfare caseloads have declined dramatically, and employment rates among current and former recipients, as well as single female heads of household more broadly, have risen substantially (Council of Economic Advisers, 1999; Burtless, 2000). The combination of welfare reform legislation, tight labor markets, and other policy-induced changes (such as expansions of the Earned Income Tax Credit and availability of child care and medical assistance to the working poor) are generally credited with generating these developments (Ellwood, 1999; Meyer and Rosenbaum, 2000; Blank, 2000). Furthermore, the gains accruing to welfare recipients from employment generally seem to outweigh the costs, and thus incentives for them to gain employment seem strong (Acs et al., 1999; Danziger, Corcoran, and Heflin, 2000; Schoeni and Blank, 2000).

But a number of questions remain about the labor market prospects of welfare recipients, and especially their ability to be hired relatively easily. For instance, can all recipients gain employment rapidly? Where are they being hired—into what kinds of firms or jobs—and at what wages? Are there particular barriers to gaining employment that some groups of welfare recipients face, and are these generally more serious for black and Hispanic recipients than for whites? Finally, to what extent is the demand for their labor dependent on a strong overall economy, and will it weaken during the next economic downturn and remain weaker for several years, until the aggregate economy achieves its next cyclical peak?[1]

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[1]Other labor market issues that will affect this group appreciably include employment stability or retention for those who gain employment (e.g., Holzer and Lalonde, 2000; Holzer and Stoll, 2000) as well as the adequacy of the wages and benefits received when they work (Burtless, 1995).

To date, the evidence suggests that most welfare recipients are able to obtain employment at some point in time, at least after leaving the welfare rolls; yet 50–60 percent of these leavers are not employed in any particular quarter (e.g., Loprest, 1999). Also, certain recipients have multiple limitations that inhibit their ability to gain employment (Danziger et al., 1999; Zedlewski, 1999). To complement our understanding of these barriers, we also need a clearer understanding of the *demand* side of the labor market for welfare recipients—specifically, how the characteristics of employers affect their overall willingness to hire recipients, and especially those who are members of minority groups.

In this paper, we evaluate the determinants of the demand for welfare recipients among employers. We estimate the determinants of the overall demand for recipients, whether such demand is *prospective* or *actual* (realized) to date. Conditional on employers' willingness to hire welfare recipients, we also estimate the determinants of the race of the welfare recipient hired. We use these estimates to generate predicted levels of demand under a variety of different labor market conditions and employer characteristics. The exercise uses data from a new survey in four large metropolitan areas that gauges employers' willingness to hire welfare recipients, reports their experiences to date, and provides data on a wider range of labor market and other characteristics.

In Section II, we describe the data in more detail and discuss our estimation strategy. The results of the estimation are presented in Section III, and results and conclusions appear in Section IV.

II. DATA AND ESTIMATION STRATEGY

The data used in this paper come from a 20-minute telephone survey administered to approximately 750 establishments in each of four large metropolitan areas: Chicago, Cleveland, Milwaukee, and Los Angeles. The survey was administered between October 1998 and May 1999, a period when the national economy registered some of the lowest unemployment rates in 30 years. Employers were drawn from lists complied by Survey Sampling Inc. (SSI), primarily from telephone

directories. To the extent possible, phone interviews were targeted at the person in the establishment responsible for entry-level hiring.[2]

The surveyed firms were chosen from a sample stratified ex ante by establishment size, with establishments in each category drawn to reflect the fraction of the workforce employed in that size category. Thus, the sample should be representative of the distribution of the workforce across establishment size categories without any need for additional size-weighting.[3] Comparisons of these data with he U.S. Census Bureau's 1998 County Business Patterns for the four Metropolitan Statistical Areas indicate similar one-digit industrial distributions. Thus, the sample of firms reasonably represents the universe of firms in these areas.

The survey questions focus on overall firm characteristics (e.g., establishment size, industry, presence of collective bargaining, distance from public transit stops), including the numbers of all jobs currently vacant and those that require very limited skills (i.e., no formal education or training and also no need for reading, writing, or arithmetic on the job). One section of the survey focused on any recent hiring of welfare recipients, including the characteristics of the last job into which a welfare recipient was hired and of the last welfare recipient hired into that job; another section focused on potential current demand and potential future demand. In addition, we attached to these surveyed establishments 1990 U.S. census data measuring the firms' weighted distance (in miles) to various populations more likely to use welfare. These populations included those persons using public assistance in 1989 and poor female-headed households (with children). Poor female-headed households have extremely high rates of welfare use (Van Hook, Bean, and Glick, 1996) and therefore likely reflect the potential welfare recipient population. These latter measures allow us to control for firms' spatial proximity to welfare recipient populations and

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[2]The response rate from firms has generally averaged about 70 percent in these surveys. These response rates compare favorably with other recent employer surveys (Holzer, 1996; Kling, 1995).

[3]The size distributions used here were 20 percent in the 1–19 size category; 35 percent in the 20–99 category; and 45 percent in the category of 100 or more. Since response rates in small establishments lag behind those of larger ones, the actual distributions of establishments across these categories are a bit more skewed toward the larger ones.

to examine, at a more detailed geographic level than the central-city/suburban dichotomy, whether spatial factors serve as barriers to work for this group.

In the analysis, we use a number of measures to examine firms' hiring of welfare recipients. First, we focus on survey questions that address the current *prospective* demand for welfare recipients. Respondents were asked whether they would be willing to consider hiring welfare recipients right away if approached by an agency that was trying to place them, and, if so, how many they would consider hiring currently.[4] We use these answers to construct a variable measured as the percentage of all jobs in the establishment that could be filled by newly hired welfare recipients currently (i.e., at the time of the interview). A second measure focuses on *actual* (or realized) demand for welfare recipients. This variable is based on questions about the actual number of current or former welfare recipients hired during the past year, transformed to indicate the percentage of all jobs in the establishment that were filled by welfare recipients over that year.

Of course, the former variable is a more subjective measure of demand than the latter; it measures employers' self-reported willingness to hire recipients rather than their actual behavior. Therefore, its reliability as a measure of demand is subject to greater question. On the other hand, the realized demand measure should reflect a mix of demand-side (i.e., firms) and supply-side (i.e., workers) factors, as well as factors that might limit the access of the workers to these firms, whereas the prospective measure should be a cleaner measure of the demand for the labor of welfare recipients among employers. Thus, comparing outcomes observed for the former and latter measures of demand should enable us to sort out

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[4]The current measure of prospective hiring is likely to be more accurate than others available to us, such as the prospective demand for welfare recipients over the next year, since the former reflects employers' current assessment of their labor needs, rather than their assessment of demand over some future period during which product demand, turnover, and other determinants of hiring are uncertain.

the relative importance of demand-side and supply-side factors that might limit the hiring of welfare recipients.[5]

For those employers who report that they hired at least one welfare recipient recently, we also analyze the race of the last welfare recipient hired. We use this measure to examine the demand-side factors that differentially influence the hiring of black and Hispanic welfare recipients. For questions on the last welfare recipient hired, we limit the sample to individuals who the employers were either "definitely sure" or "fairly sure" were currently or had been on welfare. An overwhelming majority of employers who responded to the questions about the most recently hired welfare recipient fit into one of these two categories.[6]

Using these variables as our outcome measures, we estimated the following two sets of equations:

$$PWELF_k = f(X_k) + u_k \tag{1a}$$

$$AWELF_k = g(X_k) + v_k \tag{1b}$$

$$Pr(RACE_{jk} = i \mid AWELF_k >= 1) = g(X_j, X_k) + e_{jk} \tag{2}$$

where PWELF and AWELF refer to the percentage of jobs at the establishment that would prospectively be filled or have actually been filled by welfare recipients, respectively; RACE refers to the race of the last welfare recipient hired, conditional on the fact that at least one has been hired; the X are a variety of independent variables; i takes on the values of 1, 2, 3, or 4 depending on whether that person's race was white, black, Hispanic, or other; and j and k denote the last job filled by a welfare recipient and the establishment, respectively. Equations 1a and 1b thus represent overall demand for welfare recipients at these establishments, while equation 2 represents the conditional demand for welfare recipients of different racial groups.

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[5]We also have measures for prospective demand over the next year and realized demand over the past 2 years (rather than over the past year). Results using these alternative demand measures are qualitatively similar to those presented below. See Holzer and Stoll (2000).

[6]In about 50 percent of the cases, employers believed that these hired individuals were still on welfare. In most of the remaining cases, they believed that the hired individuals had been on welfare in the recent past.

Since a large fraction of establishments would hire or would have hired no welfare recipients, demand for these recipients might be censored at zero. Thus, equations 1a and 1b are estimated with the tobit functional form as well as with ordinary least squares (OLS). Also, since we consider four possible racial groups from which these welfare recipients are hired, equation 2 is estimated by multinomial logit.[7]

The demand for welfare recipients as new hires at any establishment, as well as the conditional demand for welfare recipients of any particular racial group, should reflect a variety of the establishment's underlying characteristics and employer behaviors, such as:

- the establishment's overall demand for labor and the ease with which it can fill that demand with other applicants;
- its skill needs; and
- possible discrimination against welfare recipients in general or subgroups of them in particular.[8]

In addition to these factors, the extent to which of welfare recipients from any particular group is actually hired at any establishment will also depend on their relative supply to that establishment, or their ability to *match* themselves (or have access) to that employer. Determinants of these match (or mismatch) rates should include spatial factors, such as the establishment's geographic location and its proximity to public transit, since transportation appears to be an important determinant of employment prospects for welfare recipients (Ong and Blumenberg, 1998; Danziger et al., 1999). An establishment's particular

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[7]About 32 percent of employers report they would hire at least one welfare recipient currently and about 22 percent have hired at least one in the past year. Zero values on either prospective or realized demand can be considered censored, in the sense that negative demand could exist in the form of layoffs or discharges of those previously hired. Although equations 1a, 1b, and 2 could also have been estimated through a nested logit strategy, we estimated these two stages separately for the sake of clarity and ease of computation.

[8]Overall labor demand and market tightness more than proportionally affect the demand for the most marginal groups in the labor force, such as the young and minority groups (e.g., Freeman and Rodgers, 1999); since some firms will experience more tightness than others at any moment in time, their demand for recipients will vary accordingly. Employer skill needs will reflect technological factors and the relative prices of different levels of skill in the labor market, while discrimination can reflect either employer preferences or their perceptions of average employee productivity across groups.

recruitment and screening methods for hiring could influence its accessibility to welfare recipients as well (Holzer, 1996).

To reflect all of these factors, we use a number of establishment characteristics as independent variables in the analysis. To proxy overall demand for new labor and the relative ease with which such demand is filled (i.e., the quantity of labor demanded relative to that supplied) at the establishment level, we use the current job vacancy rate, measured as the percentage of all jobs in the establishment that are vacant and available for immediate occupancy.[9] The estimated effects of the vacancy rate on the hiring of welfare recipients should also enable us to infer the effects of the business cycle on such demand, as the aggregate vacancy rate clearly varies over the cycle (Abraham, 1983).[10]

Overall skill requirements are captured by the percentage of all jobs that require no specific education, experience, or reading/writing or arithmetic skills. Geographic factors that we expect to influence the actual hiring of welfare recipients include the establishment's location within the metropolitan area—i.e., in central cities or suburbs.[11] In some specifications, we also use an establishment's self-reported distance from public transit stops, or its average distance from various low-income or racial population groups in the metropolitan area.[12] A variety of other establishment characteristics—such as its size, industry, collective bargaining status, and minority ownership—should

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[9]The vacancy rate should incorporate both the *frequency* of new hiring, reflecting turnover and net employment growth at the establishment, and the average *duration* of such efforts, reflecting its ability to find acceptable applicants for these jobs. Both dimensions of hiring should influence the firm's willingness to hire welfare recipients.

[10]Of all the independent variables used in this study, only the job vacancy rate is time-varying for any establishment. Our use of a contemporaneous measure of vacancies makes it more appropriate as a determinant of current demand than of past demand. The extent to which the vacancy rate has varied from its current value over the previous year will determine the extent of any downward bias in its estimated effect on past demand, due to measurement error.

[11]These areas are defined conventionally by political jurisdiction boundaries except in Los Angeles where the central city boundary excludes the San Fernando Valley and includes East Los Angeles. See Stoll, Holzer, and Ihlanfeldt (2000) for a more thorough discussion of the justification for these changes.

[12]More precisely, these distances are weighted averages of the distances (in miles) from the census tracts in which the establishments are located to every other census tract in the metropolitan area, weighted by the percentages of each population group (e.g., persons on public assistance) located in those other census tracts, according to the 1990 Census of Population STF3a files.

also reflect employer skill needs and/or preferences in ways that influence its hiring patterns; these characteristics are included in our estimation as well. Indeed, the effect of virtually all of the above variables on an establishment's hiring of low-skill and/or minority workers has been demonstrated in past work.[13]

Among the hiring practices of an establishment that might increase its accessibility to the welfare population are the presence of a welfare-to-work program and whether the establishment has had contact with a local welfare-to-work agency. On the other hand, these activities might simply reflect the employer's underlying skill needs or preferences for welfare recipients. Since contact that is agency-initiated more likely reflects exogenous changes in access than when it is employer-initiated, we present separate measures of each. But, given the questions that surround the interpretation of both the program and agency variables, all estimates appear with and without them included.

Since all of the above variables might well affect an employer's hiring of welfare recipients in general or those of specific racial groups, we include these variables in estimates of equations 1a and 1b and equation 2. But we also add some job-specific variables in equation 2, such as occupation dummies, task performance dummies, and particular recruitment and screening variables used to fill that job. Certain establishment-wide variables are also included that should reflect employer preferences for particular minority groups, or the relative supplies of workers from those groups to these establishments, such as the percentages of customers and/or applicants for jobs that are black and Hispanic (e.g., Holzer and Ihlanfeldt, 1998; Stoll, Holzer, and Ihlanfeldt, 2000).

We present a variety of specifications that use the variables listed above. Unobserved heterogeneity across establishments and jobs is always a concern with regard to cross-sectional estimates, but we hope that the broad range of the variables described here will limit its effects. These estimates can also be used to predict the effects of various demand shifts on the employment prospects of welfare

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[13]See, for instance, Holzer (1996, 1998, 1999), Holzer and Ihlanfeldt (1996), and Stoll, Holzer, and Ihlanfeldt (2000).

recipients, though some relatively strong assumptions must be made when doing so, as we will discuss below.

III. EMPIRICAL RESULTS

A. Summary Results

Table 1 presents mean hiring rates of welfare recipients, measured as the percentages of all jobs at establishments that would prospectively be filled by welfare recipients at the current time or that have actually been filled by recipients (i.e., those currently or previously on welfare) in the past year. The distribution of the most recently hired welfare recipients across racial groups is also presented. Both sets of measures are presented for the pooled sample of metropolitan areas, and separately by metropolitan area or by central-city/suburban location within metropolitan areas.

The results on overall hiring in the pooled sample show that employers are prospectively willing to fill almost 2 percent of their jobs with welfare recipients currently (i.e., at the time of the survey) and that recipients have filled almost 3 percent of jobs over the past year. The latter figure represents an upper-bound estimate of the percentage of jobs filled in this period, because turnover implies that employers might fill the same jobs multiple times with welfare recipients. Adjusting that figure for expected turnover rates (based on other evidence in the survey) would generate a current overall employment rate of roughly 2 percent for welfare recipients and total current demand (i.e., actual current employment plus prospective new hiring) of roughly 4 percent.[14] Obviously, these figures imply that the overall level of demand for welfare recipients during the late 1990s has been quite high, and

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[14]In Holzer and Stoll (2000), we report turnover rates for the last-hired welfare recipient of 25 percent over an average employment duration of 7–8 months. Assuming similar average durations and turnover rates for all welfare recipients implies a current actual employment rate of roughly .75*.026, or about 2 percent.

TABLE 1
Mean Prospective and Actual Hiring of Welfare Recipients

	Prospective Demand: Current (1)	Actual Demand: Past Year (2)	Last Welfare Recipient Hired			
			White (3)	Black (4)	Hispanic (5)	Other (6)
All	**.017**	**.026**	**.291**	**.497**	**.163**	**.049**
Central cities	.014	.031	.209	.586	.151	.054
Suburbs	.020	.021	.394	.386	.178	.042
Chicago	.018	.019	.220	.618	.122	.047
Cleveland	.020	.039	.444	.458	.065	.033
Los Angeles	.013	.015	.188	.375	.389	.049
Milwaukee	.017	.030	.291	.549	.091	.069

Note: Columns 3–6 sum to approximately 1.

appears large enough to absorb the increase in labor supply represented by welfare recipients, *at least in the aggregate*.[15]

Looking across geographical locations within metropolitan areas, we find that prospective demand for welfare recipients is somewhat greater in suburbs than in central cities, but the opposite pattern is true for actual (or realized) demand, which is almost 50 percent higher in central cities.[16] In other words, while suburban firms are at least as willing (if not more so) to hire welfare recipients than are central-city firms, they actually hire fewer of them. This suggests that spatial factors may limit the access of welfare recipients to potentially available suburban jobs, an issue to which we return in greater detail below.

Across metropolitan areas, there is also somewhat less variation in prospective than actual demand for welfare recipients across metropolitan areas. Prospective hiring ranges from .013 in Los Angeles to .020 in Cleveland, while actual demand for welfare recipients in the past year was considerably lower in Los Angeles and Chicago (at .015 and .019, respectively) than in Milwaukee and Cleveland (.030 and .039, respectively). Differences in prospective demand across metropolitan areas appear to reflect variations in overall hiring rates, skill demands, etc., whereas the additional variation in actual hiring seems to reflect determinants of access or differences across cities and states in welfare-to-work programs and policy implementation (Holzer and Stoll, 2000).

As noted above, there are reasons to be cautious of the interpretation of these numbers. For instance, if employers find it more "politically correct" to answer these questions affirmatively, this could

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[15]It appears as though the number of former welfare recipients who have entered the labor market to date is somewhat under 2 million, or over 1 percent of the labor force. In addition, a significant number of those still on the rolls have entered, and many who have not yet done so may do so in the near future as they approach time limits or leave for other reasons. These results are consistent with other research that indicates fairly strong demand for welfare recipients in the current period (e.g., Burtless, 2000).

[16]The standard error on a mean of a binomial variable is $p(1-p)/n$, where p is the mean and n is the sample size. The standard error on the difference between any two such variables (assuming they are fully independent) is the square root of the sum of squared standard errors on each. Thus, standard errors on the differences we consider here and below are generally in the range of .02–.03.

bias upwards our measures of prospective demand for welfare recipients. Another potential source of upward bias in this measure is the fact that, even when employers are willing to hire welfare recipients, there will likely be competition from other applicants who in many cases are at least as acceptable to the employer, though this problem is much less severe in the kind of very tight labor markets that characterize these areas.[17] Because our measure of prospective demand is based on subjective responses of employers, they are likely measured with some error which, if random, should not affect overall means—but these might downward bias estimated differences across categories. On the other hand, given that the prospective and actual demand measures correlate in sensible ways across and within metropolitan areas, we have somewhat greater confidence that both are meaningful measures.

Finally, the data on race indicate that, for the pooled sample, blacks account for roughly half of recently hired recipients while blacks and Hispanics together account for about two-thirds. Of course, these data will heavily reflect the demographics of the low-income populations in the four metropolitan areas that we happen to be considering. Looking across metropolitan areas, we note that recently hired Hispanic recipients are heavily concentrated in Los Angeles, while blacks are more heavily represented in the three Midwestern areas, reflecting the demographics of the low-income populations in these areas.

Still, the rate of hiring for minority recipients in these areas appears to lag somewhat behind their representations in the female-headed low-income populations there, suggesting that minority welfare recipients face more serious employment barriers than do their white counterparts.[18] For instance, blacks account for 65–70 percent of the female-headed low-income households in the three Midwestern areas, and likely account for similar percentages of welfare recipients there; but just 45–60 percent of the newly

[17]For instance, about 80 percent of employers report some difficulty finding qualified applicants currently, and about 40 percent report great difficulty in doing so.

[18]Danziger et al. (1999) also find lower rates of employment among blacks than whites in the welfare caseload.

hired welfare recipients in these areas are black (Holzer and Stoll, 2000).[19] Similarly, Hispanics account for almost half of the female-headed poor families in Los Angeles but under 40 percent of the welfare recipients hired there.

Furthermore, blacks account for roughly one-third less of the newly hired welfare recipients in suburban establishments than in the cities (i.e., roughly 40 percent and 60 percent, respectively). This indicates their lower relative access to employers in the former locations, due to their residential concentrations in the central cities and perhaps additional transportation or information-related reasons, as suggested by the literature on "spatial mismatch" (e.g., Holzer and Ihlanfeldt, 1996; Ihlanfeldt and Sjoquist, 1998).

Table 2 presents means of firm-level characteristics that are likely to be determinants of employer demand for recipients. These include some general characteristics such as major industry group and establishment size category; the job vacancy rate at the establishment, representing net labor demand; the percentage of jobs that require few skills (defined here as requiring no education or experience and no daily reading, writing, or arithmetic); suburban location; collective bargaining, not-for-profit or minority ownership status; and a few variables indicating activities associated with the hiring of welfare recipients, such as the presence of a welfare-to-work program and contact with a welfare-to-work agency (initiated by either the employer or the agency). Means of these variables (mostly categorical) appear for the overall sample of establishments and separately for central-city versus suburban ones.

The results in Table 2 indicate that about 60 percent of establishments in these metropolitan areas are in the service or retail trade industry, with the former more concentrated in central cities and the latter in suburbs. Roughly half of establishments are also located in the central cities of these metropolitan areas. Smaller percentages of establishments are unionized, nonprofit, or minority owned. In addition,

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[19]Specifically, blacks constituted 71, 64, and 64 percent of the poor female-headed households in the Chicago, Cleveland, and Milwaukee metropolitan areas, respectively, in 1990.

TABLE 2
Means (std. devs.) of Firm-Level Characteristics

Pooled Sample of Metro Areas	All	Central City	Suburbs
Industry			
Manufacturing	0.177	0.168	0.186
Retail	0.218	0.197	0.241
Service	0.383	0.422	0.343
Firm Size			
1–19	0.231	0.225	0.237
20–50	0.216	0.186	0.247
51–100	0.145	0.154	0.136
100	0.407	0.434	0.380
Vacancy Rate	0.054	0.050	0.060
	(0.104)	(0.090)	(0.116)
0.000	0.372	0.366	0.378
0.001–0.040	0.265	0.269	0.262
0.041–0.080	0.175	0.189	0.160
> 0.080	0.188	0.176	0.200
% Jobs Unskilled	0.093	0.098	0.089
	(0.207)	(0.214)	(0.201)
0.000	0.679	0.671	0.686
0.001–0.100	0.103	0.102	0.104
0.101–0.200	0.062	0.066	0.058
> 0.200	0.156	0.160	0.151
Suburbs	0.489	—	—
Collective Bargaining	0.229	0.254	0.203
Not-for-Profit	0.191	0.210	0.171
Minority-Owned	0.123	0.132	0.113
Welfare-to-Work Program	0.083	0.090	0.077
Placement Agency Contacted Firm	0.126	0.149	0.102
Firm Contacted Placement Agency	0.073	0.086	0.059

small percentages of establishments have welfare-to-work programs and/or have been contacted by a training agency or initiated such contact.

The data indicate a job vacancy rate of over 5 percent, which is extremely high—in fact, higher than the average unemployment rates of these metropolitan areas in the late 1990s. If correctly measured, these data suggest an extraordinary degree of labor market tightness.[20] Fewer than 40 percent of all establishments report no job vacancies, which is considerably lower than the percentage reporting no vacancies in the early 1980s (Holzer, 1994). Vacancy rates are also higher in suburbs than in central cities. On the other hand, only about 9 percent of jobs in these establishments are unskilled by our definition, and the same measure is likely to be even lower for newly filled jobs only.[21] In fact, over two-thirds of all establishments report no such low-skill positions at all.

B. Determinants of Prospective and Actual Demand

Table 3 presents results of estimated regression equations in which the dependent variables are the percentages of jobs filled by welfare recipients, either prospectively at the current time or actually over the past year.

Results from two specifications of equations 1a and 1b are presented. Results are also presented for equations estimated by OLS and tobit, where the latter functional form is used to deal with the potential censoring that may occur as implied by the large number of zero values in these variables. The first specification includes basic firm characteristics such as its industry, size, vacancy rate, and

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[20]Abraham (1983) and Holzer (1989) provide evidence that unemployment rates usually exceed job vacancy rates by considerable amounts at all points in the business cycle. This pattern is true only in Los Angeles in our data, where the job vacancy rate in our sample is .047 while the unemployment rate in 1998 stood at .065. Other measures in our data confirm the extreme tightness of these labor markets, such as the fact that roughly 80 percent of employers report difficulty finding qualified applicants for their positions (Holzer, 1999).

[21]See Holzer and Stoll (2000). In a period when skill requirements on jobs are rising, net demand for skills will be higher in relatively newer jobs. On the other hand, if skill demands are lower in jobs with higher turnover rates, this effect might be mitigated somewhat.

TABLE 3
Determinants of Prospective and Actual Demand for Welfare Recipients

	Prospective Demand: Current				Actual Demand: Past Year			
	OLS		Tobit		OLS		Tobit	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Industry								
Manufacturing	0.009	0.010	0.033	0.036	-0.004	-0.001	-0.008	0.011
	(0.006)	(0.006)	(0.026)	(0.026)	(0.011)	(0.011)	(0.039)	(0.039)
Retail	0.018**	0.018**	0.117**	0.118**	0.021**	0.021**	0.076**	0.079**
	(0.006)	(0.006)	(0.025)	(0.024)	(0.010)	(0.010)	(0.037)	(0.037)
Service	0.016**	0.016**	0.080**	0.079**	0.017*	0.017*	0.061*	0.064*
	(0.006)	(0.006)	(0.024)	(0.024)	(0.010)	(0.010)	(0.036)	(0.036)
Firm Size								
1–19	0.021**	0.021**	0.011	0.023	0.024**	0.029**	-0.030	-0.001
	(0.005)	(0.005)	(0.017)	(0.018)	(0.008)	(0.008)	(0.029)	(0.029)
20–50	0.007*	0.008*	-0.012	-0.006	0.009	0.012*	-0.019	-0.003
	(0.004)	(0.004)	(0.015)	(0.015)	(0.007)	(0.007)	(0.025)	(0.025)
51–100	0.007*	0.008*	0.016	0.022	0.001	0.005	-0.004	0.016
	(0.004)	(0.004)	(0.015)	(0.015)	(0.007)	(0.007)	(0.025)	(0.025)
Collective Bargaining	-0.001	-0.001	0.005	0.004	-0.001	-0.001	-0.013	-0.014
	(0.004)	(0.004)	(0.013)	(0.013)	(0.006)	(0.006)	(0.021)	(0.021)
Not-for-Profit	-0.009**	-0.009**	-0.034**	-0.035**	0.001	0.001	0.012	0.002
	(0.004)	(0.004)	(0.015)	(0.015)	(0.007)	(0.007)	(0.024)	(0.023)
Minority-Owned	0.005	0.005	0.022	0.019	0.015**	0.013*	0.076**	0.064**
	(0.004)	(0.004)	(0.016)	(0.016)	(0.007)	(0.007)	(0.025)	(0.025)

(table continues)

TABLE 3, continued

	Prospective Demand: Current				Actual Demand: Past Year			
	OLS		Tobit		OLS		Tobit	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Suburbs	0.007**	0.007**	0.037**	0.039**	-0.007	-0.007	-0.027	-0.025
	(0.003)	(0.003)	(0.011)	(0.011)	(0.005)	(0.005)	(0.018)	(0.018)
Vacancy Rate								
0.001–0.040	0.012**	0.012**	0.140**	0.137**	0.006	0.003	0.088**	0.073**
	(0.004)	(0.004)	(0.018)	(0.018)	(0.007)	(0.007)	(0.026)	(0.025)
0.041–0.080	0.013**	0.012**	0.169**	0.165**	0.013*	0.009	0.112**	0.090**
	(0.004)	(0.004)	(0.018)	(0.018)	(0.007)	(0.007)	(0.026)	(0.026)
> 0.080	0.043**	0.043**	0.222**	0.219**	0.021**	0.019**	0.107**	0.096**
	(0.004)	(0.004)	(0.016)	(0.016)	(0.007)	(0.007)	(0.024)	(0.024)
% Jobs Unskilled								
0.001–0.100	-0.003	-0.003	-0.013	0.036	-0.003	-0.003	0.032	0.025
	(0.005)	(0.005)	(0.017)	(0.020)	(0.008)	(0.008)	(0.027)	(0.027)
0.101–0.200	0.004	0.004	0.036*	0.036*	-0.002	-0.002	0.047	0.045
	(0.006)	(0.006)	(0.020)	(0.020)	(0.010)	(0.010)	(0.033)	(0.033)
> 0.200	0.008**	0.008**	0.050**	0.049**	0.013*	0.012*	0.081**	0.075**
	(0.004)	(0.004)	(0.014)	(0.014)	(0.007)	(0.007)	(0.023)	(0.023)
Welfare-to-Work Program	—	0.008	—	0.062**	—	0.044**	—	0.192**
		(0.005)		(0.016)		(0.009)		(0.026)
Agency Contacted Firm	—	-0.001	—	0.014	—	0.009	—	0.061**
		(0.004)		(0.015)		(0.007)		(0.024)

(table continues)

TABLE 3, continued

	Prospective Demand: Current				Actual Demand: Past Year			
	OLS		Tobit		OLS		Tobit	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Firm Contacted Agency	—	0.005	—	0.036**	—	0.018*	—	0.053*
		(0.005)		(0.019)		(0.009)		(0.031)
Constant	-0.023**	-0.024**	-0.410**	-0.423**	-0.008	-0.014	-0.422**	-0.453**
	(0.007)	(0.007)	(0.032)	(0.033)	(0.012)	(0.012)	(0.047)	(0.047)
-Log likelihood	—	—	-489.0	-478.8	—	—	-882.6	-848.9
Adjusted R^2	0.07	0.07	—	—	0.03	0.04	—	—

Notes: Standard errors are in parentheses. Sample size is 2,722. Controls for MSA (L.A. is the reference category) are included in all specifications. The reference category for industry is F.I.R.E.

Statistical significance: ** $p < .05$, * $p < .10$.

percentage of jobs that are unskilled.[22] It also includes percentage of employers covered by collective bargaining, and dummies for not-for-profit status, minority ownership, and suburban location. In the second specification, we add variables indicating specific activities related to the hiring of welfare recipients, though their exogeneity is somewhat questionable; these include dummies for the presence of a welfare-to-work program at the firm and for contact with a welfare-to-work agency, whether initiated by the firm or by the agency.

Generally, the vacancy rate and the percentage of jobs that are unskilled are positively and significantly related to prospective and actual demand for welfare recipients. Indeed, the large effects of contemporaneous vacancy rates on actual and especially prospective current demand suggests, as reported elsewhere (Holzer, 1999), that tight labor markets have been quite conducive thus far to the hiring of welfare recipients.[23] The results also indicate that both prospective demand and actual demand for recipients are significantly greater in retail trade and service industries, even when controlling for hiring conditions and skill needs at these establishments (Bartik and Eberts, 1999). Such demand is also somewhat higher in smaller firms (though this result holds only for the OLS specifications).[24]

In column 2 of Table 3, the presence of a welfare-to-work program is positively and significantly related to demand for welfare recipients in most equations, though these effects could reflect either the hiring activities associated with this program or underlying employer preferences. Similarly, contact between the firm and a welfare-to-work agency positively affects the demand for recipients. While these

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[22]Although all ten one-digit industry dummy variables (with F.I.R.E used as the reference category) are included in all specifications, we show results only for the manufacturing, retail trade, and service industry variables (since the vast majority of firms fall into one of these industries and since the majority of recipients are hired into them).

[23]The tobit estimates imply that the demand for welfare recipients at a firm with a vacancy rate at the sample mean will be 17 percentage points higher than at one with no vacancies. The magnitudes of these effects are explored in greater detail in Table 6 below.

[24]Whether industry and size measures reflect other dimensions of skill or employer preferences is not clear here. For instance, skill demands are generally considered lower in small and/or retail trade establishments, which partially accounts for the relatively low wages observed there (Brown, Hamilton, and Medoff, 1990; Krueger and Summers, 1987).

latter effects are more consistently positive and significant when firms initiated the contact (again reflecting either their behaviors or preferences), there is some evidence of positive effects for agency-initiated contacts as well. The inclusion of these program and recruitment variables does not significantly change the estimated coefficients of the other independent variables.

Of particular interest here is a comparison of the determinants of prospective and actual demand, since the former is more likely to reflect demand-side effects only, while the latter reflects both demand-side and supply-side factors. A number of observations emerge from these comparisons. First, in each specification, prospective demand for welfare recipients is significantly greater in suburbs than in central cities, while actual demand is marginally lower; this strongly suggests that the factors associated with greater physical distance (such as transportation costs or informational deficiencies) limit welfare recipients' access to potentially available jobs.[25] Second, not-for-profit or minority-owned firms actually hire recipients at relatively greater rates than their prospective demand for them would suggest, implying a potential role for information about or social contacts among welfare recipients at these establishments. Finally, the positive effects of welfare-to-work programs or contact with placement agencies are greater for actual than for prospective demand. All of these results imply that the access of welfare recipients to employers affects the extent to which they are hired at different kinds of establishments, independently of employer demand for them.

C. Differential Demand by Race

The determinants of employer demand for welfare recipients are also likely to influence the race of the last welfare recipient hired, especially since supply- and demand-side determinants of employment are likely to differ among racial groups. Table 4 presents a series of estimated multinomial logit

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[25]Stoll, Holzer, and Ihlanfeldt (2000) show that in several large metropolitan areas, the majority of poor female-headed households and persons on public assistance live in central cities.

TABLE 4
Determinants of Race of Last-Hired Welfare Recipient

	Black					Hispanic				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Industry										
Manufacturing	-0.149	-0.141	-0.129	-0.159	-0.152	0.120	0.140	0.085	0.068	0.076
	(0.098)	(0.102)	(0.105)	(0.107)	(0.109)	(0.064)	(0.067)	(0.070)	(0.072)	(0.074)
Retail	-0.361**	-0.354**	-0.401**	-0.389**	-0.400**	0.043	0.075	0.093	0.070	0.078
	(0.092)	(0.098)	(0.100)	(0.101)	(0.104)	(0.062)	(0.066)	(0.071)	(0.072)	(0.073)
Service	-0.158	-0.140	-0.083	-0.071	-0.084	0.017	0.069	0.059	0.048	0.054
	(0.089)	(0.093)	(0.097)	(0.098)	(0.099)	(0.060)	(0.063)	(0.067)	(0.068)	(0.070)
Firm Size										
1–19	-0.083	-0.139	-0.167*	-0.157*	-0.159*	-0.044	-0.021	-0.004	-0.010	-0.010
	(0.082)	(0.091)	(0.093)	(0.093)	(0.094)	(0.050)	(0.053)	(0.057)	(0.058)	(0.059)
20–50	0.004	-0.004	0.016	0.028	0.018	-0.075*	-0.049	-0.043	-0.043	-0.047
	(0.068)	(0.074)	(0.077)	(0.078)	(0.080)	(0.045)	(0.046)	(0.048)	(0.048)	(0.049)
51–100	-0.039	-0.035	-0.012	-0.016	-0.015	-0.071*	-0.042	-0.094**	-0.087*	-0.079*
	(0.065)	(0.071)	(0.075)	(0.076)	(0.078)	(0.042)	(0.044)	(0.046)	(0.046)	(0.047)
Collective Bargaining	0.113*	0.086	0.109	0.103	0.102	-0.069	-0.076	-0.067	-0.063	-0.071
	(0.059)	(0.065)	(0.067)	(0.067)	(0.068)	(0.040)	(0.043)	(0.045)	(0.045)	(0.046)
Not-for-Profit	-0.081	-0.109*	-0.077	-0.090	-0.084	0.015	-0.014	-0.020	-0.013	-0.016
	(0.062)	(0.065)	(0.071)	(0.073)	(0.076)	(0.041)	(0.045)	(0.047)	(0.047)	(0.048)
Minority-Owned	0.020	0.002	-0.031	-0.032	0.019	0.066*	0.050	0.036	0.037	0.038
	(0.069)	(0.077)	(0.082)	(0.083)	(0.085)	(0.039)	(0.043)	(0.048)	(0.049)	(0.051)
Suburbs	-0.255**	-0.232**	-0.247**	-0.264**	-0.248**	-0.095**	-0.089**	-0.092**	-0.089**	-0.090**
	(0.051)	(0.056)	(0.059)	(0.060)	(0.061)	(0.031)	(0.033)	(0.034)	(0.035)	(0.036)

(table continues)

TABLE 4, continued

	Black					Hispanic				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Vacancy Rate										
0.001–0.040	0.066	0.100	0.145*	0.150*	0.135	-0.043	-0.039	-0.033	-0.035	-0.040
	(0.070)	(0.077)	(0.078)	(0.078)	(0.079)	(0.045)	(0.047)	(0.050)	(0.050)	(0.051)
0.041–0.080	0.064	0.092	0.129*	0.141*	0.136*	0.017	0.006	0.013	0.006	0.005
	(0.068)	(0.071)	(0.073)	(0.074)	(0.075)	(0.046)	(0.047)	(0.050)	(0.051)	(0.052)
> 0.080	0.023	0.052	0.083	0.078	0.060	0.053	0.028	0.028	0.026	0.027
	(0.070)	(0.077)	(0.080)	(0.080)	(0.081)	(0.045)	(0.047)	(0.048)	(0.048)	(0.049)
% Jobs Unskilled										
0.001–0.100	-0.014	0.034	0.044	0.043	0.047	0.002	-0.036	-0.044	-0.036	-0.040
	(0.071)	(0.076)	(0.079)	(0.079)	(0.081)	(0.045)	(0.049)	(0.051)	(0.051)	(0.052)
0.101–0.200	-0.123*	-0.095	-0.111	-0.115	-0.112	0.038	0.025	0.007	0.011	0.016
	(0.079)	(0.085)	(0.088)	(0.088)	(0.089)	(0.049)	(0.050)	(0.052)	(0.052)	(0.053)
> 0.200	-0.019	0.020	0.053	0.055	0.061	-0.018	-0.018	-0.048	-0.046	-0.050
	(0.062)	(0.068)	(0.072)	(0.073)	(0.073)	(0.041)	(0.042)	(0.045)	(0.046)	(0.046)
Welfare-to-Work Prgm.	0.107*	0.056	0.043	0.038	0.026	0.023	0.014	0.027	0.021	0.023
	(0.062)	(0.073)	(0.076)	(0.076)	(0.077)	(0.039)	(0.043)	(0.044)	(0.046)	(0.047)
Agency Contacted Firm	0.042	-0.015	-0.020	-0.031	-0.021	-0.087*	-0.078*	-0.072*	-0.070	-0.085*
	(0.060)	(0.067)	(0.070)	(0.071)	(0.072)	(0.044)	(0.046)	(0.048)	(0.048)	(0.049)
Firm Contacted Agency	-0.062	-0.122	-0.103	-0.108	-0.120	0.047	0.060	0.046	0.045	0.048
	(0.079)	(0.083)	(0.087)	(0.088)	(0.091)	(0.046)	(0.046)	(0.050)	(0.050)	(0.051)

(Table continues)

TABLE 4, continued

	Black					Hispanic				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
% of Customers Who Are:										
Black	—	0.005**	0.005**	0.005**	0.005**	—	-0.002	-0.002	-0.002	-0.002
		(0.001)	(0.002)	(0.002)	(0.002)		(0.001)	(0.002)	(0.002)	(0.002)
Hispanic	—	-0.002	-0.002	-0.002	-0.003	—	0.003**	0.003**	0.002**	0.003**
		(0.002)	(0.002)	(0.002)	(0.002)		(0.001)	(0.001)	(0.001)	(0.001)
% of Applicants Who Are:										
Black females	—	0.004**	0.004**	0.004**	0.004**	—	0.001	0.001	0.001	0.001
		(0.001)	(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)	(0.001)
Black males	—	0.004**	0.004**	0.004**	0.004**	—	-0.001	-0.001	-0.001	-0.001
		(0.001)	(0.001)	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)	(0.001)
Hispanics	—	-0.003*	-0.003	-0.003	-0.002	—	0.001	0.001	0.001	0.001
		(0.002)	(0.002)	(0.002)	(0.002)		(0.001)	(0.001)	(0.001)	(0.001)
Task Requirements on Job										
Customer contact	—	—	-0.054	-0.064	-0.070	—	—	-0.010	-0.004	-0.003
			(0.073)	(0.074)	(0.075)			(0.047)	(0.047)	(0.048)
Reading and writing	—	—	-0.010	-0.022	-0.018	—	—	-0.008	-0.009	-0.010
			(0.067)	(0.068)	(0.069)			(0.039)	(0.040)	(0.040)
Math	—	—	0.068	0.064	0.073	—	—	-0.037	-0.030	-0.033
			(0.065)	(0.066)	(0.067)			(0.037)	(0.037)	(0.038)
Computers	—	—	-0.108	-0.106	-0.096	—	—	-0.047	-0.039	-0.044
			(0.063)	(0.063)	(0.064)			(0.042)	(0.042)	(0.042)
Completing forms	—	—	-0.004	-0.021	-0.003	—	—	-0.071**	-0.069**	-0.066*
			(0.068)	(0.068)	(0.069)			(0.034)	(0.035)	(0.035)

(table continues)

TABLE 4, continued

	Black					Hispanic				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Gauges/Instruments	—	—	0.167**	0.151**	0.132*	—	—	-0.050	-0.042	-0.048
			(0.065)	(0.065)	(0.067)			(0.041)	(0.041)	(0.042)
Employment Test	—	—	—	0.061	0.066	—	—	—	-0.005	-0.004
				(0.050)	(0.051)				(0.045)	(0.046)
Drug Test	—	—	—	0.028	0.006	—	—	—	0.039	0.045
				(0.079)	(0.081)				(0.077)	(0.077)
Criminal Check	—	—	—	0.080	0.094	—	—	—	-0.027	-0.032
				(0.052)	(0.052)				(0.047)	(0.048)

Notes: Equations are estimated using multinomial logit, with white females as the base group. Partial derivatives (evaluated at the means) are shown, with adjusted standard errors presented in parentheses. Sample size is 561. Controls for MSA (L.A. is the reference category) are included in all specifications. Also added to the equations in columns 3–5 are one-digit occupation dummy variables (sales is reference category) for the last welfare recipient hired. Column 5 includes controls for the education level and immigrant status of the last welfare recipient hired.

Statistical significance: ** $p < .05$, * $p < .10$.

regressions for equation 2 (with white welfare recipients as the base group) that examine factors influencing the race of the last welfare recipient hired.[26]

All estimated coefficients have been transformed into partial derivatives and evaluated at their sample means, with similar adjustments in standard errors. The equation presented in the first column includes the basic *establishment* variables listed in column 2 of Table 3. In the second column, we add some additional race-specific characteristics of these establishments, such as the percentages of customers and job applicants who are black and Hispanic, which reflect employer preferences and/or other measures of access to the establishment across these groups (Holzer and Ihlanfeldt, 1996, 1998). In the third column, we add controls for characteristics of the *job filled*, such as whether each of a series of tasks is required on a daily basis and 1-digit occupation dummies (though the latter are not shown). In the fourth column, we add in some additional *employer behaviors* that might have differential effects across racial groups, such as use of employment or drug tests and criminal checks. Finally, in the fifth column, we also include a few other characteristics of the *worker* hired, such as whether s/he achieved a high school diploma and whether or not s/he is an immigrant (not shown).[27]

The results indicate that many of the determinants of overall demand for welfare recipients have relatively little effect on the racial composition of demand for welfare recipients. Somewhat surprisingly, overall demand conditions (proxied by job vacancy rates) increase the conditional demand for black recipients but are often insignificant, while skill requirements have uneven and generally insignificant effects on the employers' relative demand for black or Hispanic recipients. Similarly, the cognitive tasks performed on the job (as well as occupation dummies) have few effects. These findings are generally in contrast to what we find in the broader labor market literature on minority hiring (Holzer, 1996; Freeman

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[26]We have not presented the results for welfare recipients who are categorized racially as "other," since they represent a very small fraction of the last-hired recipients.

[27]By inserting these other characteristics of the hired recipients, we merely net out the effects of those characteristics on the conditional hiring of the minority groups, and do not imply that they have any causal effects. The means of these newly included establishment, job, and individual characteristics appear in Table A1.

and Rodgers, 1999).[28] The only major exceptions are completing forms on the job (which tends to lower Hispanics' hiring, perhaps because of difficulties with English) and gauge and instrument tasks (which tends to increase the hiring of blacks, ceteris paribus).

The lack of significant effects of occupation or job tasks on the race of the last welfare recipient hired might be explained by the fact that, when compared with the labor market as a whole, there is less variation in the tasks of jobs that welfare recipients are hired into and in the skills that they bring to the job. The results also suggest that, at least among welfare recipients, employers may not perceive significant skill gaps by race.

But, relative to their white counterparts, black and Hispanic welfare recipients are less likely to be hired in suburban and/or smaller establishments, and for blacks, in the retail trade industries. These effects are more consistent with what we find in the broader market (Holzer, 1998; Holzer and Ihlanfeldt, 1996) and imply that black welfare recipients likely experience problems of access, related to their residential locations and "spatial mismatch," as well as some possible discrimination in these firms (particularly the smaller ones).

Furthermore, the results indicate that, relative to white welfare recipients, black and Hispanic recipients are more likely to be hired in firms with greater fractions of black and Hispanic customers, respectively. The hiring of black welfare recipients is also higher in firms with larger fractions of black female and male applicants. Thus, the racial preferences of employers and their customers, as well as the preferences of employees themselves about where to seek work, seem to affect where welfare recipients are hired, consistent with previous research on customer discrimination and on applicant preferences (Holzer and Ihlanfeldt, 1996, 1998).[29]

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[28]Results on task performance are not affected by the inclusion or exclusion of the occupation dummies, and vice versa.

[29]In Holzer and Ihlanfeldt (1998), the direct effect of customer attitudes is identified as the difference between the customer effects in jobs that do and do not involve direct customer contact. In the estimates reported here, this interaction did not generate significant results, thus casting some doubt on whether the race-of-customer effect here is really capturing those effects or some other unobserved characteristics of these establishments.

Finally, we find some evidence that black recipients are more likely to be hired in firms that do employment tests and/or criminal checks, consistent with the notion that use of more objective means of assessing employees' skills or backgrounds reduces the potential for racial bias against black employees in the hiring process (Moss and Tilly, 1996). It is also possible that these results merely reflect the greater use of these screening techniques in the firms and jobs in which blacks and Hispanics happen to be hired, but the lack of estimated occupational effects here casts some doubt on this interpretation. The inclusion of controls for education and immigrant status in the final specification does not significantly alter the estimated effects of the other variables of interest.

D. More on Spatial Effects

Clearly, the evidence from the previous analysis indicates that locational factors limit the employment prospects of welfare recipients, and in particular those who are black or Hispanic. In this analysis so far, we have used the simple central-city/suburban dichotomy to characterize space. This is a reasonable approach, since recent research indicates that the majority of residents in metropolitan areas more likely to use welfare (i.e., those on public assistance or poor female heads of household) live in the central city (Stoll, Holzer, and Ihlanfeldt, 2000). However, because these residents tend to be concentrated in particular parts of central cities, such as heavily minority areas, the central-city/suburban dichotomy might not fully capture the problem of distance for these groups.

Table 5 provides alternative estimates of the effects of the establishment's spatial location by using a measure of its proximity to public transit, such as the establishment's distance from the closest public stop, as well as its relative distance to those more likely to use welfare (i.e., populations on public assistance and to black and Hispanic poor female-headed households). Welfare recipients are more likely to travel by public transit than are nonrecipients, while black, and to a lesser extent Hispanic, recipients are more likely to travel by public transit than are their white counterparts (Ong, 1996; O'Regan and

TABLE 5
Effects of Alternative Characterizations of Space on Hiring Welfare Recipients

	Prospective Demand: Current			Actual Demand: Past Year		
	Tobit			Tobit		
A.	(1)	(2)	(3)	(1)	(2)	(3)
Suburbs	0.037**	0.033**	0.040**	-0.014	0.035	0.040
	(0.012)	(0.016)	(0.018)	(0.019)	(0.028)	(0.029)
Distance to Closest Public Transit Stop						
0.26–1.00 miles	-0.003	-0.004	-0.003	0.003	0.001	0.001
	(0.015)	(0.018)	(0.018)	(0.025)	(0.028)	(0.028)
>1.00 mile	0.009	0.001	0.005	-0.044*	-0.031	-0.032
	(0.014)	(0.018)	(0.018)	(0.025)	(0.029)	(0.029)
Relative Distance - Pop. using Public Assistance[a]	—	0.078**	—	—	-0.188**	—
		(0.043)			(0.069)	
Relative Distance - Black Poor Female HHHs[b]	—	—	0.097**	—	—	-0.088*
			(0.036)			(0.051)
Relative Distance - Hispanic Poor Female HHHs[b]	—	—	-0.057	—	—	-0.069
			(0.044)			(0.067)

	Last Welfare Recipient Hired: Multinomial Logit[c]					
	Black			Hispanic		
B.	(4)	(5)	(6)	(4)	(5)	(6)
Suburbs	-0.215**	-0.122*	-0.129*	-0.071*	-0.023	-0.022
	(0.064)	(0.067)	(0.069)	(0.038)	(0.042)	(0.044)
Distance to Closest Public Transit Stop						
0.26–1.00 miles	0.074	0.089	0.079	-0.035	-0.035	-0.031
	(0.081)	(0.086)	(0.087)	(0.062)	(0.065)	(0.067)
>1.00 mile	-0.253**	-0.271**	-0.290**	0.074	0.084	0.082
	(0.099)	(0.100)	(0.102)	(0.080)	(0.082)	(0.083)
Relative Distance - Pop. using Public Assistance[a]	—	-0.602**	—	—	0.023	—
		(0.132)			(0.108)	

(table continues)

TABLE 5, continued

	Last Welfare Recipient Hired: Multinomial Logit[c]					
	Black			Hispanic		
B.	(4)	(5)	(6)	(4)	(5)	(6)
Relative Distance - Black Poor Female HHHs[b]	—	—	-0.614** (0.175)	—	—	0.180 (0.147)
Relative Distance - Hispanic Poor Female HHHs[b]	—	—	0.130 (0.208)	—	—	-0.241** (0.121)

Notes: Standard errors are in parentheses. Sample size is 441. Columns 1–3 include all control variables listed in Table 3, column 2, for the tobit model. Columns 4–6 include all control variables listed in Table 4, column 5.

[a]Relative distance (in miles) to population not using public assistance.
[b]Relative distance (in miles) to white poor female heads of households.
[c]Partial derivatives shown (evaluated at the means), with adjusted standard errors presented in parentheses.

Statistical significance: ** $p < .05$, * $p < .10$.

Quigley, 1999).[30] Thus, we also expect lower hiring of welfare recipients, in particular black recipients, in establishments farther from public transit stops and/or from these population groups.

Panels A and B display a series of specifications examining the effect of distance on hiring welfare recipients. Panel A shows the results of tobit estimates for the prospective and actual demand measures for welfare recipients, while Panel B presents multinomial logit estimates for the last welfare recipient hired (with white welfare recipients as the base group). The results in Panel A indicate that prospective demand for welfare recipients is *higher* not only in suburban areas but also in areas relatively far from populations on public assistance and from black poor female-headed households. However, the results also indicate that actual demand for welfare recipients is generally *lower* in these areas. These results are consistent with those from Table 3 which indicate that spatial barriers to work prevent welfare recipients from attaining employment in firms that are potentially willing to hire them. However, we find little evidence that an establishment's distance from public transit stops influences prospective or actual demand for welfare recipients.

Panel B examines these issues for the race of the last welfare recipient hired. The results indicate that relative to their white counterparts, black welfare recipients are much less likely to be hired in suburban areas, in areas relatively far from populations on public assistance and from poor black female-headed households, or in establishments that are far from public transportation stops. These effects remain fairly consistent across the alternative specifications. We also find some evidence that locational factors influence whether the last recipient hired is Hispanic.

Thus, the reduced access of those in poor communities to suburban employers limits the employment options of welfare recipients in general, but particularly of minority recipients, with those employers. Furthermore, demand for welfare recipients in suburbs is even more responsive to overall

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[30]Using 1990 U.S. census data, O'Regan and Quigley (1999) show large interracial differences among poor female heads of households on public assistance in access to automobiles and use of public transit to travel to work. Black poor female heads of household on public assistance have less access to private cars and are significantly more likely to travel by public transit than are their white and Hispanic counterparts.

demand conditions than in central cities, implying even larger potential employment losses there than elsewhere during economic downturns.[31]

E. Summary of Marginal Effects

To compare the various magnitudes of these effects on overall demand for recipients and on differential demand by race, and to ascertain net effects on the employment of minority welfare recipients, we present summaries of marginal effects in Table 6. Specifically, we present predicted values of prospective and actual demand for welfare recipients, the conditional demands for the three primary racial groups, and the joint demand (prospective or actual) for welfare recipients by race. The latter are based on the following, defined for any given job j at firm k:

$$\Pr(WELF_{jk}=1, RACE_{jk}=i) = \Pr(WELF_{jk}=1) * \Pr(RACE_{jk}=i \mid WELF_{jk}=1) \quad (3)$$

where WELF represents whether or not the job is filled by a welfare recipient. The probability that job j is filled by a welfare recipient is, of course, largely determined either by PWELF or AWELF at the establishment level. Multiplying either of these by the conditional probability that the job is filled by someone of race i generates the joint probability that it is filled by a welfare recipient of that race.

We generate the predicted probabilities of hiring welfare recipients using estimated regression equations from Tables 3 through 5 (in particular, the final specification associated with each outcome), and by changing the values of one variable at a time while holding all others constant at their sample means. In virtually each case, the variable being changed takes on its different categorical values.[32] The variables analyzed this way include the job vacancy rate, the proportions of unskilled workers at the

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[31]An interaction term between suburban location and the vacancy rate generates positive and significant coefficients in both the prospective and actual demand equations. More details are available from the authors.

[32]The one exception is the variable on relative distance of the establishment to poor and nonpoor populations, which is continuous rather than categorical. In this case, we compare values that are one standard deviation above and below the mean.

TABLE 6
Demand for Welfare Recipients: Summary of Marginal Effects

	Prospective Demand (1)	Actual Demand (2)	Conditional Demand: Last-Hired Welfare Recipient White (3)	Black (4)	Hispanic (5)	Joint Demand: Prospective Demand x Last-Hired Welfare Recipient White (6)	Black (7)	Hispanic (8)	Actual Demand x Last-Hired Welfare Recipient White (9)	Black (10)	Hispanic (11)
Mean	**.017**	**.026**	**.291**	**.497**	**.163**	**.0049**	**.0084**	**.0028**	**.0076**	**.0129**	**.0042**
Vacancy Rate											
0.00	.002	.016	.347	.416	.161	.0007	.0008	.0003	.0056	.0067	.0026
0.001–0.040	.018	.029	.304	.541	.132	.0055	.0097	.0024	.0088	.0157	.0038
0.041–0.080	.025	.033	.267	.524	.180	.0067	.0131	.0045	.0088	.0173	.0059
> 0.080	.041	.034	.278	.435	.192	.0114	.0178	.0079	.0095	.0148	.0065
% Jobs Unskilled											
0.000	.015	.023	.290	.476	.176	.0044	.0071	.0026	.0067	.0109	.0040
0.001–0.100	.013	.028	.298	.528	.137	.0039	.0069	.0018	.0083	.0148	.0038
0.101–0.200	.023	.032	.359	.420	.198	.0083	.0097	.0046	.0115	.0134	.0063
> 0.200	.026	.039	.301	.549	.130	.0078	.0143	.0034	.0117	.0214	.0051
Location											
Central cities	.014	.029	.213	.548	.180	.0030	.0077	.0025	.0062	.0159	.0052
Suburbs	.022	.024	.413	.409	.148	.0091	.0090	.0033	.0099	.0098	.0036
Relative Distance[a] - Population on Public Assistance											
1 std dev below mean (0.65)	.015	.035	.230	.556	.163	.0035	.0083	.0024	.0081	.0195	.0057
1 std dev above mean (1.01)	.022	.019	.363	.429	.172	.0080	.0094	.0038	.0069	.0082	.0033
Distance to Transit Stop[a]											
0–0.25 miles	.017	.027	.272	.504	.155	.0046	.0086	.0026	.0073	.0136	.0042
0.26–1.00 miles	.016	.027	.267	.600	.126	.0043	.0096	.0020	.0072	.0162	.0034
> 1.00 miles	.018	.021	.352	.330	.294	.0063	.0059	.0053	.0074	.0069	.0062

(table continues)

TABLE 6, continued

	Prospective Demand (1)	Actual Demand (2)	Conditional Demand: Last-Hired Welfare Recipient White (3)	Black (4)	Hispanic (5)	Joint Demand: Prospective Demand x Last-Hired Welfare Recipient White (6)	Black (7)	Latino (8)	Actual Demand x Last-Hired Welfare Recipient White (9)	Black (10)	Latino (11)
Mean	**.017**	**.026**	**.291**	**.497**	**.163**	**.0049**	**.0084**	**.0028**	**.0076**	**.0129**	**.0042**
Industry											
F.I.R.E.	.006	.019	.235	.653	.111	.0014	.0039	.0007	.0045	.0124	.0021
Manufacturing	.010	.021	.266	.434	.166	.0027	.0043	.0017	.0056	.0091	.0035
Retail	.026	.035	.443	.358	.176	.0115	.0093	.0046	.0155	.0125	.0062
Service	.018	.032	.240	.559	.159	.0043	.0101	.0029	.0077	.0179	.0051
Firm Size											
1–19	.020	.026	.373	.410	.171	.0075	.0082	.0034	.0097	.0107	.0044
20–50	.015	.026	.304	.537	.141	.0046	.0081	.0021	.0079	.0140	.0037
51–100	.020	.029	.335	.501	.118	.0067	.0100	.0024	.0097	.0145	.0034
>100	.017	.026	.266	.491	.188	.0045	.0083	.0032	.0069	.0128	.0049
Minority Owned											
No	.017	.025	.303	.492	.156	.0052	.0084	.0027	.0076	.0123	.0039
Yes	.021	.039	.287	.483	.208	.0060	.0101	.0044	.0112	.0188	.0081
Welfare-to-Work Program											
No	.016	.022	.308	.494	.161	.0049	.0079	.0026	.0068	.0109	.0035
Yes	.030	.073	.257	.472	.178	.0077	.0142	.0053	.0188	.0345	.0130
Agency Contacted Firm											
No	.017	.025	.291	.487	.170	.0049	.0083	.0029	.0073	.0122	.0043
Yes	.020	.037	.353	.499	.127	.0071	.0100	.0025	.0131	.0185	.0047
Firm Contacted Agency											
No	.017	.026	.297	.499	.157	.0050	.0085	.0027	.0077	.0130	.0041
Yes	.024	.037	.335	.421	.217	.0080	.0101	.0052	.0124	.0156	.0080

Notes: Marginal effects for Prospective and Actual Demand based on respective tobit equations in column 2, Table 3, unless otherwise noted. Marginal effects for Last-Hired Welfare Recipient based on the multinomial logit equation in column 5, Table 4, unless otherwise noted.
[a]Marginal effects based on equations in Table 5, column 2, for Prospective and Actual Demand, and Table 5, column 5 for Last-Hired Welfare Recipient.

establishment, and the establishment's location, size, industry, minority ownership, and participation in a welfare-to-work program or contact with a local agency.

A number of important results appear in Table 6. We find the sensible result that current prospective demand for welfare recipients almost completely disappears when there are no vacancies at a firm, and it rises somewhat more moderately as vacancies rise. Actual demand over the previous year displays a similar but less pronounced pattern, as the contemporaneous vacancy rate does not perfectly capture earlier demand conditions. Combined with the more modest effects of vacancy rates on conditional demands for different racial groups, we find very large effects on the joint demands for all groups, but especially for minority welfare recipients.

What do these results suggest about demand for welfare recipients during an economic downturn? Previous evidence (Abraham, 1983; Holzer, 1994) implies that job vacancy rates are roughly in the range of .01–.02 in a severe recession, with very large fractions of establishments (70–80 percent) reporting no vacancies at all (in contrast to the 35–40 percent of establishments that appear to have no vacancies in Table 2).[33] When weighted averages of the job vacancy categories are computed that are consistent with these means and frequencies, we find prospective demand for all recipients reduced to .004–.006, or by two-thirds to three-fourths, and prospective demand for minority recipients reduced by even more.[34] On the other hand, actual demand for recipients is reduced by considerably less (to .018–.019, which is just a fourth to a third lower than its current mean level). Also, milder recessions imply less severe employment

[33]In particular, Table 2 of Holzer (1994) reports distributions of numbers of vacancies for establishments of different size categories. Of course, the actual vacancy rate during a recession will depend on its severity, and the effects of the recession on the demand for labor of any group will also depend on how the recession affects retention as well as new hiring for that group.

[34]For instance, a distribution of establishments with .80, .10, .05, and .05 of them in the four vacancy categories (from lowest to highest) generates a mean vacancy rate of .015, using midpoints of each range and a mean of .2 in the top category. This generates a predicted value of .004 for prospective demand for recipients.

losses.[35] In short, almost any economic downturn implies large employment losses for welfare recipients, though the exact magnitudes are uncertain and will vary considerably with the severity of the downturn.[36]

Other findings from Table 6 include the following:

- Going from the lowest to highest category on the percentage of jobs in an establishment that are unskilled roughly doubles the joint demand for either white or black recipients (and has a somewhat lesser effect for Hispanics).
- Being in a suburban location reduces an establishment's joint actual demand for black recipients (relative to a central-city location) by about 40 percent, and decreasing its proximity to public transit or poor populations reduces such demand by half or more.
- Joint demand for white recipients is at least twice as high in retail trade as at the mean, but it is just a bit higher for Hispanics and roughly comparable for blacks in that sector.
- Joint demand for all racial groups of welfare recipients is somewhat higher in minority-owned firms than elsewhere.
- The presence of welfare-to-work programs is associated with a doubling or tripling of joint demand for minority welfare recipients and large increases for white recipients as well.
- Contact with the relevant local agencies is associated with substantial increases in demand for white and black recipients when initiated by agencies and especially for Hispanics when initiated by firms.

Thus, we find that the differences in demand for welfare recipients associated with many establishment characteristics are quite large, and that limitations on their employment at some establishments might imply a variety of barriers to employment in the labor market overall, particularly for minority recipients.

The marginal results presented here must be interpreted with some caution. In a strict sense, the results from a cross section of establishments simply tell us the extent to which the probability that a given establishment will hire a welfare recipient changes when one of its underlying characteristics

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[35]For instance, a distribution associated with a mean vacancy rate of .036 implies prospective demand of .010 and actual demand at .022, which are 40 percent and 15 percent below their current mean values.

[36]The current vacancy rate is a more appropriate predictor of demand for welfare recipients currently than in the recent past, as this rate might have varied from its current value during that time period. On the other hand, since not all of current prospective demand is realized, inferring the effect of vacancies on the latter from the former is problematic. Also, the effect of a downturn on overall demand for recipients will include its effect on layoffs of those previously hired as well as its effect on current hiring, though we have little direct evidence on the former. Thus, the range of estimates described here for either a severe or milder recession might represent lower and upper bounds to the likely effects of each.

changes. To infer the effect of these changes on the employment prospects of welfare recipients more broadly, we must interpret these changes as shifts in the demand for labor faced by welfare recipients in a more aggregate sense, or by specific groups of recipients (i.e., those with limited skills, those residing in poor central-city neighborhoods, those who are minority, etc.). The effects of such a shift on the employment and wage prospects of welfare recipients in equilibrium could then be easily inferred.[37]

Such an interpretation raises certain econometric issues; it also requires that the shifts in demand not be offset by any adjustments in relative supply, such as might occur if recipients improve their skill levels, migrate to other neighborhoods, or have easy mobility to other jobs. Thus, the estimated effects of a change in the job vacancy rate across establishments could be interpreted as the equivalent of an aggregate effect, assuming that the vacancy rate at an establishment level is not correlated with other unobserved characteristics that vary across establishments (like the job turnover rate).[38] Likewise, the effects associated with central-city/suburban location of establishments (or their distances from public transit or poor populations) might imply the effects of changing job locations in a metropolitan area on central-city residents, assuming that they cannot gain comparable employment in the suburbs by simply choosing to incur marginally higher costs of commuting.[39]

IV. CONCLUSIONS

In this paper, we have used survey data on employers in four large metropolitan areas to measure the labor demand faced by welfare recipients, both overall and by race, and to analyze how such demand varies across employers and geographic areas. We also distinguish between prospective demand,

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[37]As is well known, a given percentage shift in labor demand in equilibrium will generate percentage changes in employment and wages of 1/(D+S) and S/(D+S) time that shift respectively, where D and S represent labor demand and supply elasticities.

[38]Including controls for industry, establishment size, and the like reduces the likelihood that such unobservables seriously bias our estimates.

[39]In fact, Allard and Danziger (2000) show that greater distances of the residences of welfare populations from jobs are associated with reduced likelihood of employment for them.

reflecting an expressed willingness by employers to hire welfare recipients, and their actual (realized) demand, reflected in their actual hiring behavior. Comparisons across these two measures enable us to infer the effects of relative supply or "access" of recipients, as opposed to pure demand considerations by employers.

The results of this paper can be summarized as follows:

- Overall employer demand for welfare recipients is quite strong, and in the aggregate appears large enough to absorb any increases in the supply of recipients in the labor market as long as strong labor market conditions persist.

- On the other hand, the overall level of unmet labor demand, as measured by job vacancy rates, has large effects on the hiring of recipients, implying that demand for them might shrink significantly during an economic downturn. Other major determinants of demand across establishments include their skill requirements, size, and industry.

- Establishments located in central cities (or nearer to transit stops and poorer populations), those that are minority-owned, and those that have worked with local agencies appear to be more accessible to welfare recipients and therefore hire more recipients than do others.

- Minority welfare recipients are hired somewhat less frequently than their representation in the population of poor female-headed households would lead us to predict. Conditional on hiring welfare recipients, the relative tendencies of establishments to hire minorities (especially African Americans) appear to be less closely related to overall demand conditions or employer skill needs than to location and dependence on public transit, and possibly to discriminatory employer preferences as well.

Overall, the findings suggest a labor market for welfare recipients that is quite strong but somewhat uneven in terms of recipients' accessibility to jobs, one that could be significantly weakened during an economic recession, and one that contains particular barriers to minority recipients. Consistent with other evidence, we therefore find that employment may not be easily obtained for all welfare recipients in all times or places, even if most seem to have little difficulty gaining such employment currently.

From a policy perspective, the estimates suggest that interventions by local agencies that improve the accessibility of employers to welfare recipients—whether through job placement efforts, transportation, or basic skill enhancement—could broaden and thereby improve recipeints' employment prospects. The findings here also imply a strong need for policymakers to plan for an economic downturn

and to ensure the adequacy of the "safety net" for all recipients in those circumstances. Among the options through which this could be accomplished are reforms in the Unemployment Insurance program, increased availability of community service jobs, and/or modifications of work requirements and time limits under the Temporary Assistance for Needy Families system.

These findings are, of course, subject to a number of caveats. They are based on a single cross section of employers and therefore are subject to concerns about unobserved measures that might be correlated with observed employer characteristics. On the other hand, the range of control variables included here is quite extensive, thus diminishing our concerns about unobserved heterogeneity to some extent.

Furthermore, we need to interpret these findings with some caution, even if they are accurately estimated. In some cases, especially those related to geographic location, these results may tell us more about *where* welfare recipients are employed than *whether* they will become employed. In a strong labor market where nearby demand is sufficient, the relatively lower access of minority welfare recipients to suburban employers, or the relatively weaker demand they face at small retail-trade establishments, might not significantly limit their overall employment options. On the other hand, in a somewhat weaker market, these limitations could become more serious. But other estimated effects on the hiring of welfare recipients presented here, particularly those related to job vacancy rates and therefore to overall labor demand, are more likely to reflect binding constraints on the employment that recipients will face in the labor market.

Finally, it is important to note a wider set of concerns about the labor market prospects of welfare recipients, and those of the unskilled and the "working poor" more broadly. These other concerns include not only whether such individuals will be easily hired but whether they will be able to retain the jobs they

receive, and whether the wages and benefits that they earn over time will be adequate to generate independence and self-sufficiency.[40]

[40]Evidence on turnover, job performance, earnings, and other measures of workplace outcomes for welfare recipients appears in Holzer and Stoll (2000).

TABLE A1
Means (std. devs.) of Key Variables for Last-Hired Welfare Recipient

Pooled Sample of Metro Areas	All	Central City	Suburbs
Task Requirements on Job			
Customer contact	0.701	0.671	0.739
Reading and writing	0.551	0.511	0.602
Math	0.548	0.514	0.591
Computers	0.392	0.372	0.417
Completing forms	0.618	0.589	0.655
Gauges/Instruments	0.269	0.281	0.254
Occupation			
Manager/Professional	0.027	0.034	0.019
Sales	0.172	0.177	0.165
Clerical	0.303	0.281	0.330
Service	0.296	0.312	0.276
Craft	0.034	0.031	0.038
Operator	0.036	0.043	0.027
Laborer	0.133	0.122	0.146
Employment Tests	0.291	0.266	0.322
Drug Test	0.087	0.091	0.083
Criminal Check	0.400	0.414	0.383
% Customers Who Are:			
Black	21.4 (25.5)	26.1 (28.2)	15.4 (20.2)
Hispanic	12.1 (19.4)	11.5 (19.8)	12.9 (19.0)
% Applicants Who Are:			
Black females	15.3 (25.3)	20.6 (29.3)	8.7 (17.0)
Black males	12.5 (22.2)	15.8 (24.7)	8.2 (17.7)
Hispanics	12.7 (23.3)	12.8 (23.5)	12.7 (22.9)

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